

# PATENT COOPERATION TREATY

REC'D 15 AUG 2005

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From the  
INTERNATIONAL SEARCHING AUTHORITY

To:  
RODNEY L. SPARKS  
UNIVERSITY OF VIRGINIA PATENT FOUNDATION  
1224 WEST MAIN STREET, SUITE 1-110  
CHARLOTTESVILLE, VA 22903

## PCT

WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43bis.1)

Date of mailing  
(day/month/year)

12 AUG 2005

Applicant's or agent's file reference

00955-02

**FOR FURTHER ACTION**

See paragraph 2 below

International application No.

PCT/US04/41440

International filing date (day/month/year)

08 December 2004 (08.12.2004)

Priority date (day/month/year)

08 December 2003 (08.12.2003)

International Patent Classification (IPC) or both national classification and IPC

IPC(7): C07K 1/00 and US Cl.: 530/350

Applicant

UNIVERSITY OF VIRGINIA PATENT FOUNDATION

1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☐ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☒ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☐ Box No. VIII Certain observations on the international application

### 2. FURTHER ACTION

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA/ US

Mall Stop PCT, Attn: ISA/US  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, Virginia 22313-1450

Facsimile No. (703) 305-3230

Authorized officer

Hope A. Robinson

Telephone No. 571-272-1600

WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY

International application No.

PCT/US04/41440

Box No. I Basis of this opinion

1. With regard to the language, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ This opinion has been established on the basis of a translation from the original language into the following language \_\_\_\_\_, which is the language of a translation furnished for the purposes of international search (under Rules 12.3 and 23.1(b)).

2. With regard to any nucleotide and/or amino acid sequence disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:

a. type of material

☒ a sequence listing

☐ table(s) related to the sequence listing

b. format of material

☒ in written format

☒ in computer readable form

c. time of filing/furnishing

☒ contained in international application as filed.

☒ filed together with the international application in computer readable form.

☐ furnished subsequently to this Authority for the purposes of search.

3. ☒ In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.

4. Additional comments:

**WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY**

International application No.

PCT/US04/41440

**Box No. IV Lack of unity of invention**

1. ☒ In response to the invitation (Form PCT/ISA/206) to pay additional fees the applicant has:
- ☐ paid additional fees
  - ☐ paid additional fees under protest
  - ☒ not paid additional fees
2. ☐ This Authority found that the requirement of unity of invention is not complied with and chose not to invite the applicant to pay additional fees.
3. This Authority considers that the requirement of unity of invention in accordance with Rule 13.1, 13.2 and 13.3 is
- ☐ complied with
  - ☒ not complied with for the following reasons:  
See the lack of unity section of the International Search Report (Form PCT/ISA/210)

4. Consequently, this opinion has been established in respect of the following parts of the international application:

- ☐ all parts.
- ☒ the parts relating to claims Nos. 1-7

WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY

International application No.  
PCT/US04/41440

**Box No. V Reasoned statement under Rule 43 bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

**1. Statement**

Novelty (N)	Claims <u>2-4, 7</u>	YES
	Claims <u>1, 5-6</u>	NO
Inventive step (IS)	Claims <u>2-4, 7</u>	YES
	Claims <u>1, 5-6</u>	NO
Industrial applicability (IA)	Claims <u>NONE</u>	YES
	Claims <u>NONE</u>	NO

**2. Citations and explanations:**

Claims 1 and 5-6 lack novelty under PCT Article 33(2) as being anticipated by Strausberg et al. Directed Submission, Accession No. Q8IYV9, 01 March 2003.

Strausberg et al. teach a sequence that is 100% identical to the sequence set forth in SEQ ID NO:2. As the structure of the protein is taught by the reference the properties recited in claims 5-6 are inherent. Thus, the claimed invention is anticipated.

Claims 1 and 5-6 lack an inventive step under PCT Article 33(3) as being obvious Strausberg et al. Directed Submission, Accession No. Q8IYV9, 01 March 2003.

As Strausberg et al. teach a sequence that is 100% identical to the sequence set forth in SEQ ID NO:2 and since the structure of the protein is taught by the reference the properties recited in claims would be a property that referenced protein would also have. Thus, the claimed invention is obvious.

Claims 1 and 5-6 lack novelty under PCT Article 33(2) as being anticipated by Carninci et al. Directed Submission, Accession No. Q9D9J7, 01 June 2001.

Carninci et al. teach a sequence that is 100% identical to the sequence set forth in SEQ ID NO:1. As the structure of the protein is taught by the reference the properties recited in claims 5-6 are inherent. Thus, the claimed invention is anticipated.

Claims 1 and 5-6 lack an inventive step under PCT Article 33(3) as being obvious Carninci et al. Directed Submission, Accession No. Q9D9J7, 01 June 2001.

As Carninci et al. teach a sequence that is 100% identical to the sequence set forth in SEQ ID NO:1 and as the structure of the protein is taught by the reference the properties recited in claims 5-6 would also be exhibited by the protein in the prior art. Thus, the claimed invention is obvious.

Claims 2-4 and 7 meet the criteria set out in PCT Article 33(2)-(3), because the prior art does not teach or fairly suggest the claimed invention.

Claims 2-4 and 7 meet the criteria set out in PCT Article 33(4), and thus has industrial applicability because the subject matter claimed can be made or used in industry.